Catalyst 6500 Series Switch Content Switching Module with SSL Installation Note

Product Number: WS-X6066-SLB-S-K9

This publication describes how to install the Content Switching Module with SSL (CSM-S) in the Catalyst 6500 series switches and includes the software and hardware requirements.

Note The term *SSL daughter card* refers to a Secure Socket Layer (SSL) termination daughter card that accelerates SSL transactions. Except where specifically differentiated, the term *Content Switching Module* and its acronym *CSM* include both the Content Switching Module and the Content Switching Module with SSL. The term *Content Switching Module with SSL* and its acronym *CSM-S* are used only where the information presented is specific to the CSM-S.

Contents

This publication contains these sections:

CISCO SYSTEMS

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Safety Overview

Warning   **IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Waarschuwing   **BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.

BEWAAR DEZE INSTRUCTIES

Varoitus   **TÄRKEITÄ TURVALLISUUSOHJEITA**

Tämä varoitusmerkki merkitsee vaaraa. Tilanne voi aiheuttaa ruumiillisia vammoja. Ennen kuin käsittelet laitteistoa, huomioi sähköpiirien käsittelemiseen liittyvät riskit ja tutustu onnettomuuksien yleisiin ehkäisytapoihin. Turvallisuusvaroitusten käännökset löytyvät laitteen mukana toimitettujen käännettyjen turvallisuusvaroitusten joukosta varoitusten lopussa näkyvien lausuntonumeroiden avulla.

SÄILYTÄ NÄMÄ OHJEET

Attention   **IMPORTANTES INFORMATIONS DE SÉCURITÉ**

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS

Warnung   **WICHTIGE SICHERHEITSHINWEISE**

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

Avvertenza   **IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.

CONSERVARE QUESTE ISTRUZIONI

Advarsel   **VIKTIGE SIKKERHETSINSTRUKSJONER**

Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutten av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.

TA VARE PÅ DISSE INSTRUKSJONENE

Aviso   **INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.

GUARDE ESTAS INSTRUÇÕES

¡Advertencia!   **INSTRUCCIONES IMPORTANTES DE SEGURIDAD**

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES

Varning! **VIKTIGA SÄKERHETSANVISNINGAR**

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Använd det nummer som finns i slutet av varje varning för att hitta dess översättning i de översatta säkerhetsvarningar som medföljer denna anordning.

SPARA DESSA ANVISNINGAR

Figyelem **FONTOS BIZTONSÁGI ELOÍRÁSOK**

Ez a figyelmezeto jel veszélyre utal. Sérülésveszélyt rejto helyzetben van. Mielott bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplo figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján keresheto meg.

ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!

Предупреждение **ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ**

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ

警告 重要的安全性说明

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

警告 安全上の重要な注意事項

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

주의   중요 안전 지침

이 경고 기호는 위험을 나타냅니다. 작업자가 신체 부상을 일으킬 수 있는 위험한 환경에 있습니다. 장비에 작업을 수행하기 전에 전기 회로와 관련된 위험을 숙지하고 표준 작업 관례를 숙지하여 사고를 방지하십시오. 각 경고의 마지막 부분에 있는 경고문 번호를 참조하여 이 장치와 함께 제공되는 번역된 안전 경고문에서 해당 번역문을 찾으십시오.

이 지시 사항을 보관하십시오.

Aviso   **INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. Você se encontra em uma situação em que há risco de lesões corporais. Antes de trabalhar com qualquer equipamento, esteja ciente dos riscos que envolvem os circuitos elétricos e familiarize-se com as práticas padrão de prevenção de acidentes. Use o número da declaração fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham o dispositivo.

GUARDE ESTAS INSTRUÇÕES

Advarsel   **VIGTIGE SIKKERHEDSANVISNINGER**

Dette advarselssymbol betyder fare. Du befinder dig i en situation med risiko for legemesbeskadigelse. Før du begynder arbejde på udstyr, skal du være opmærksom på de involverede risici, der er ved elektriske kredsløb, og du skal sætte dig ind i standardprocedurer til undgåelse af ulykker. Brug erklæringsnummeret efter hver advarsel for at finde oversættelsen i de oversatte advarsler, der fulgte med denne enhed.

GEM DISSE ANVISNINGER

تحذير   إرشادات الأمان الهامة

يوضح رمز التحذير هذا وجود خطر. وهذا يعني أنك متواجد في مكان قد ينتج عنه التعرض لإصابات. قبل بدء العمل، احذر مخاطر التعرض للصدمات الكهربائية وكن على علم بالإجراءات القياسية للحيلولة دون وقوع أي حوادث. استخدم رقم البيان الموجود في أخر كل تحذير لتحديد مكان ترجمته داخل تحذيرات الأمان المترجمة التي تأتي مع الجهاز.

قم بحفظ هذه الإرشادات

Upozorenje   **VAŽNE SIGURNOSNE NAPOMENE**

Ovaj simbol upozorenja predstavlja opasnost. Nalazite se u situaciji koja može prouzročiti tjelesne ozljede. Prije rada s bilo kojim uređajem, morate razumjeti opasnosti vezane uz električne sklopove, te biti upoznati sa standardnim načinima izbjegavanja nesreća. U prevedenim sigurnosnim upozorenjima, priloženima uz uređaj, možete prema broju koji se nalazi uz pojedino upozorenje pronaći i njegov prijevod.

SAČUVAJTE OVE UPUTE

Upozornění   **DŮLEŽITÉ BEZPEČNOSTNÍ POKYNY**

Tento upozorňující symbol označuje nebezpečí. Jste v situaci, která by mohla způsobit nebezpečí úrazu. Před prací na jakémkoliv vybavení si uvědomte nebezpečí související s elektrickými obvody a seznamte se se standardními opatřeními pro předcházení úrazům. Podle čísla na konci každého upozornění vyhledejte jeho překlad v přeložených bezpečnostních upozorněních, která jsou přiložena k zařízení.

USCHOVEJTE TYTO POKYNY

Προειδοποίηση   ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ

Αυτό το προειδοποιητικό σύμβολο σημαίνει κίνδυνο. Βρίσκεστε σε κατάσταση που μπορεί να προκαλέσει τραυματισμό. Πριν εργαστείτε σε οποιοδήποτε εξοπλισμό, να έχετε υπόψη σας τους κινδύνους που σχετίζονται με τα ηλεκτρικά κυκλώματα και να έχετε εξοικειωθεί με τις συνήθεις πρακτικές για την αποφυγή ατυχημάτων. Χρησιμοποιήστε τον αριθμό δήλωσης που παρέχεται στο τέλος κάθε προειδοποίησης, για να εντοπίσετε τη μετάφρασή της στις μεταφρασμένες προειδοποιήσεις ασφαλείας που συνοδεύουν τη συσκευή.

ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ

אזהרה

הוראות בטיחות חשובות

סימן אזהרה זה מסמל סכנה. אתה נמצא במצב העלול לגרום לפציעה. לפני שתעבוד עם ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים ולהכיר את הנהלים המקובלים למניעת תאונות. השתמש במספר ההוראה המסופק בסופה של כל אזהרה כד לאתר את התרגום באזהרות הבטיחות המתורגמות שמצורפות להתקן.

שמור הוראות אלה

Opomena   постои кај електричните кола и треба да ги познавате стандардните постапки за спречување на несреќни случаи. Искористете го бројот на изјавата што се наоѓа на крајот на секое предупредување за да го најдете неговиот период во преведените безбедносни предупредувања што се испорачани со уредот.
ЧУВАЈТЕ ГИ ОВИЕ НАПАТСТВИЈА

Ostrzeżenie

WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA

Ten symbol ostrzeżenia oznacza niebezpieczeństwo. Zachodzi sytuacja, która może powodować obrażenia ciała. Przed przystąpieniem do prac przy urządzeniach należy zapoznać się z zagrożeniami związanymi z układami elektrycznymi oraz ze standardowymi środkami zapobiegania wypadkom. Na końcu każdego ostrzeżenia podano numer, na podstawie którego można odszukać tłumaczenie tego ostrzeżenia w dołączonym do urządzenia dokumencie z tłumaczeniami ostrzeżeń.

NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ

Upozornenie

DÔLEŽITÉ BEZPEČNOSTNÉ POKYNY

Tento varovný symbol označuje nebezpečenstvo. Nachádzate sa v situácii s nebezpečenstvom úrazu. Pred prácou na akomkoľvek vybavení si uvedomte nebezpečenstvo súvisiace s elektrickými obvodmi a oboznámte sa so štandardnými opatreniami na predchádzanie úrazom. Podľa čísla na konci každého upozornenia vyhľadajte jeho preklad v preložených bezpečnostných upozorneniach, ktoré sú priložené k zariadeniu.
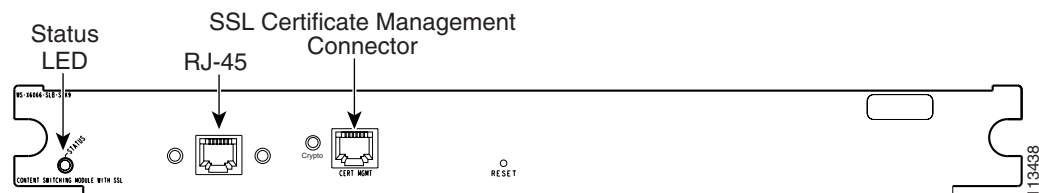
USCHOVAJTE SI TENTO NÁVOD

Front Panel Description

These sections describe the physical attributes of the CSM-S:

- LEDs, page 8
- RJ-45 Connector, page 9
- SSL Connector, page 9

Figure 1 shows the CSM-S front panel.

Figure 1   Content Switching Module with SSL Front Panel

Note   The RJ-45 connector is covered by a removable plate.

✎
Note You are required to make initial SSL daughter card configurations through a direct connection to the CSM-S Certificate Management port (Cert. Mgt). After the initial configurations, you can make an SSH or Telnet connection to further configure the module. See Chapter 5 in the *Catalyst 6500 Series Content Switching Module with SSL Installation and Configuration* Note.

LEDs

When the CSM-S powers up, it initializes various hardware components and communicates with the supervisor engine. The Status LED indicates the supervisor engine operations and the initialization results. During the normal initialization sequence, the status LED changes from off to red, orange, and green. The SSL daughter card Crypto LED is unused in this release.

✎
Note For more information on the supervisor engine LEDs, refer to the *Catalyst 6500 Series Switch Module Installation Guide*.

Table 1 describes the Status LED operation.

Table 1 *Content Switching Module LEDs*

LED	Color	Description

Status	Off	• The module is waiting for the supervisor engine to provide power.
		• The module is not online.
		• The module is not receiving power, which could be caused by the following:
		  – Power is not available to the CSM-S.
		  – Module temperature is over the limit[1].

	Red	• The module is released from reset by the supervisor engine and is booting. • If the boot code fails to run, the LED stays red after power up.
	Orange	• The module is initializing hardware or communicating with the supervisor engine. • A fault occurred during the initialization sequence. • The module has failed to download its Field Programmable Gate Arrays (FPGAs) on power up but continues with the remainder of the initialization sequence and provides the module online status from the supervisor engine. • The module has not received module online status from the supervisor engine. This problem could be caused by the supervisor engine detecting a failure in an external loopback test that it issued to the CSM-S.
	Green	• The module is operational; the supervisor engine has provided module online status.
	Green to orange	• The module is disabled through the supervisor engine CLI [2] using the **set module disable** *mod* command.
Crypto	None.	• Not used. Reserved for future releases.

1. Enter the **show environment temperature** *mod* command to display the temperature of each of the four sensors on the CSM-S.

2. CLI = command-line interface.

RJ-45 Connector

The RJ-45 connector, which is covered by a removable plate, is used to connect a management station device or a test device. This connector is used by field engineers to perform testing and to obtain dump information.

SSL Connector

The Certificate Management (Cert. Mgt.) port connector is used for SSL certificate management and is available to make the necessary connection to the SSL daughter card for initial configuration purposes. After the initial configurations, you can make an SSH or Telnet connection to further configure the module. See Chapter 5 in the *Catalyst 6500 Series Content Switching Module with SSL Installation and Configuration* Note.

Environmental and System Requirements

These sections describe the environmental and system requirements:

Environmental Requirements

Table 2 lists the environmental requirements for the CSM-S.

Table 2   CSM-S Environmental Requirements

Item	Specification
Temperature, ambient operating	0° to 40^oC (32° to 104^oF)
Temperature, ambient nonoperating	-40° to 70^oC (-40° to 158^oF)
Humidity (RH), ambient (noncondensing) operating	10% to 90%
Nonoperating relative humidity (noncondensing)	5% to 95%

System Requirements

Before you install the CSM-S in the Catalyst 6500 series switch, make sure that the switch meets the hardware and software requirements listed in this section.

⚠️
Caution You can use the Multilayer Switch Feature Card (MSFC2), which is internal to the Catalyst 6500 series switch, to route traffic on either the client side or the server side of the CSM-S, but not both simultaneously (unless policy-based routing is used).

Memory Requirements

The CSM-S memory is not configurable.

Power Supply

You can place the CSM-S in any slot in the Catalyst 6500 series chassis except for the slots that are occupied by the supervisor engine and the standby supervisor engine. The CSM-S operates on power that is supplied by the chassis. Up to four CSM-S modules can be supported by each switch chassis.

Hardware Supported

Before you can use the Catalyst 6500 series CSM-S, you must have a Supervisor Engine 2 with an MSFC2 and any module that has ports to connect server and client networks.

⚠️
Caution The WS-X6066-SLB-S-K9 CSM-S are not fabric enabled, but the module can operate in a fabric-enabled chassis like any other nonfabric module.

Table 3 lists the supported hardware and software for the CSM-S.

Table 3   Supported Hardware and Software

Product Number	Minimum Cisco IOS Release	Recommended Cisco IOS Release	Recommended Catalyst OS Releases
Content Switching Module			
Supervisor Engine 2 with MSFC2	12.2(18)SXD	12.2(18)SXD	Not applicable
Console Cable			
72-876-01		Not applicable	
Accessory Kit			
800-05097-01		Not applicable	

Software Requirements

⚠️

Caution The CSM-S release is not supported by the Catalyst operating system.

Table 4 lists the software versions for the CSM-S.

Table 4 CSM-S Software Requirements

CSM-S Software Release	Software Part Number	Hardware	Catalyst Operating System	Cisco IOS Release
2,1(1)	SC6K-1.1-CSM-S	WS-X6066-SLB-S-K9	Not Applicable	Cisco IOS software Release 12.2(18)SXD

Software Compatibility

The minimum software version that is listed is the minimum release that is required to support the CSM-S hardware with a given supervisor engine to perform basic CSM-S configuration.

The recommended version is the base version to support the new commands for a given CSM release.

Table 5 and Table 6 list the CSM-S software release compatibility.

Table 5 Cisco IOS Software on the Supervisor Engine 2 and MSFC 2

CSM-S Software	Cisco IOS Software
2.1(1)	12.2(18)SXD or higher for the features new to CSM-S release 2.1(1).

Table 6 Catalyst Operating System on the Supervisor Engine and Cisco IOS Software on the MSFC

CSM-S Software	Catalyst Operating System Software
2.1(1)	The CSM-S is currently not supported by the Catalyst operating system.

Installing the CSM-S

These sections describe how to install the CSM-S:

- Preparing to Install the CSM-S, page 12
- Required Tools, page 12
- Installing and Removing the Module, page 12

⚠️

Caution The WS-X6066-SLB-S-K9 Content Switching Module with SSL is not fabric enabled.

Preparing to Install the CSM-S

Before installing the CSM-S, make sure that the following items are available:

- Catalyst 6500 series switch chassis
- Management station that is available through a Telnet or a console connection to perform configuration tasks

Required Tools

These tools are required to install the CSM-S in the Catalyst 6500 series switches:

- Flat-blade screwdriver
- Phillips-head screwdriver
- Wrist strap or other grounding device
- Antistatic mat or antistatic foam

Whenever you handle the CSM-S, always use a wrist strap or other grounding device to prevent electrostatic discharge (ESD).

Installing and Removing the Module

⚠

Caution   During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.

All Catalyst 6500 series switches support hot swapping, which allows you to install, remove, replace, and rearrange modules without turning off the system power. For more information on removing the CSM-S from a switch, see the "Removing the Module" section on page 13.

When the system detects that a module has been installed or removed, the system automatically runs diagnostic and discovery routines, acknowledges the presence or absence of the module, and resumes system operation.

These sections describe how to install and verify the operation of the CSM-S in the Catalyst 6500 series switches:

- Slot Assignments, page 12
- Removing the Module, page 13
- Installing a Module, page 14

Slot Assignments

The Catalyst 6006 and 6506 switch chassis have 6 slots, the Catalyst 6009 and 6509 switch chassis have 9 slots, and the Catalyst 6513 switch chassis has 13 slots. The slot assignments are as follows:

✎

Note   The Catalyst 6509-NEB switch has vertical slots, which are numbered 1 to 9 from right to left. Install the modules with the component side facing to the right.

- Slot 1 is reserved for the supervisor engine.

- Slot 2 can be used for a redundant supervisor engine if the supervisor engine in slot 1 fails.

- If a redundant supervisor engine is not required, slots 2 through 6 on the 6-slot chassis, slots 2 through 9 on the 9-slot chassis, and slots 2 through 13 on the 13-slot chassis are available for switching modules, such as the CSM-S.

- The empty slots require filler plates, which are blank switching-module carriers that maintain consistent airflow through the switch chassis.

Removing the Module

This section describes how to remove an existing module from a Catalyst 6500 series switch chassis slot.

⚠
Caution During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.

⚠
Warning **Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**

To remove a module from the chassis, perform these steps:

Step 1 Disconnect any network interface cables that are attached to the module.

Step 2 Verify that the captive installation screws on all of the modules in the chassis are tight.

This step assures that the space that is created by the removed module is maintained.

✎
Note If the captive installation screws are loose, the electromagnetic interference (EMI) gaskets on the installed modules will push the modules toward the open slot, reducing the opening size and making it difficult to install the replacement module.

Step 3 Loosen the two captive installation screws on the module.

Step 4 Depending on the orientation of the slots in the chassis (horizontal or vertical), perform one of the following sets of substeps:

Horizontal slots

a. Place your thumbs on the left and right ejector levers, and simultaneously rotate the levers outward to unseat the module from the backplane connector.

b. Grasp the front edge of the module, and slide the module part of the way out of the slot. Place your other hand under the module to support the weight of the module. Do not touch the module circuitry.

Vertical slots

a. Place your thumbs on the ejector levers that are located at the top and bottom of the module, and simultaneously rotate the levers outward to unseat the module from the backplane connector.

b. Grasp the edges of the module, and slide the module straight out of the slot. Do not touch the module circuitry.

Step 5 Place the module on an antistatic mat or antistatic foam, or immediately reinstall it in another slot.

Step 6 If the slot from which you removed the module is to remain empty, install a module filler plate to keep dust out of the chassis and to maintain proper airflow through the chassis.

⚠️

Warning **Blank faceplates (filler panels) serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards and faceplates are in place.**

Installing a Module

This section describes how to install a module in the Catalyst 6500 series switches.

⚠️

Caution To prevent ESD damage, handle modules by the carrier edges only.

⚠️

Caution During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.

⚠️

Warning **Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**
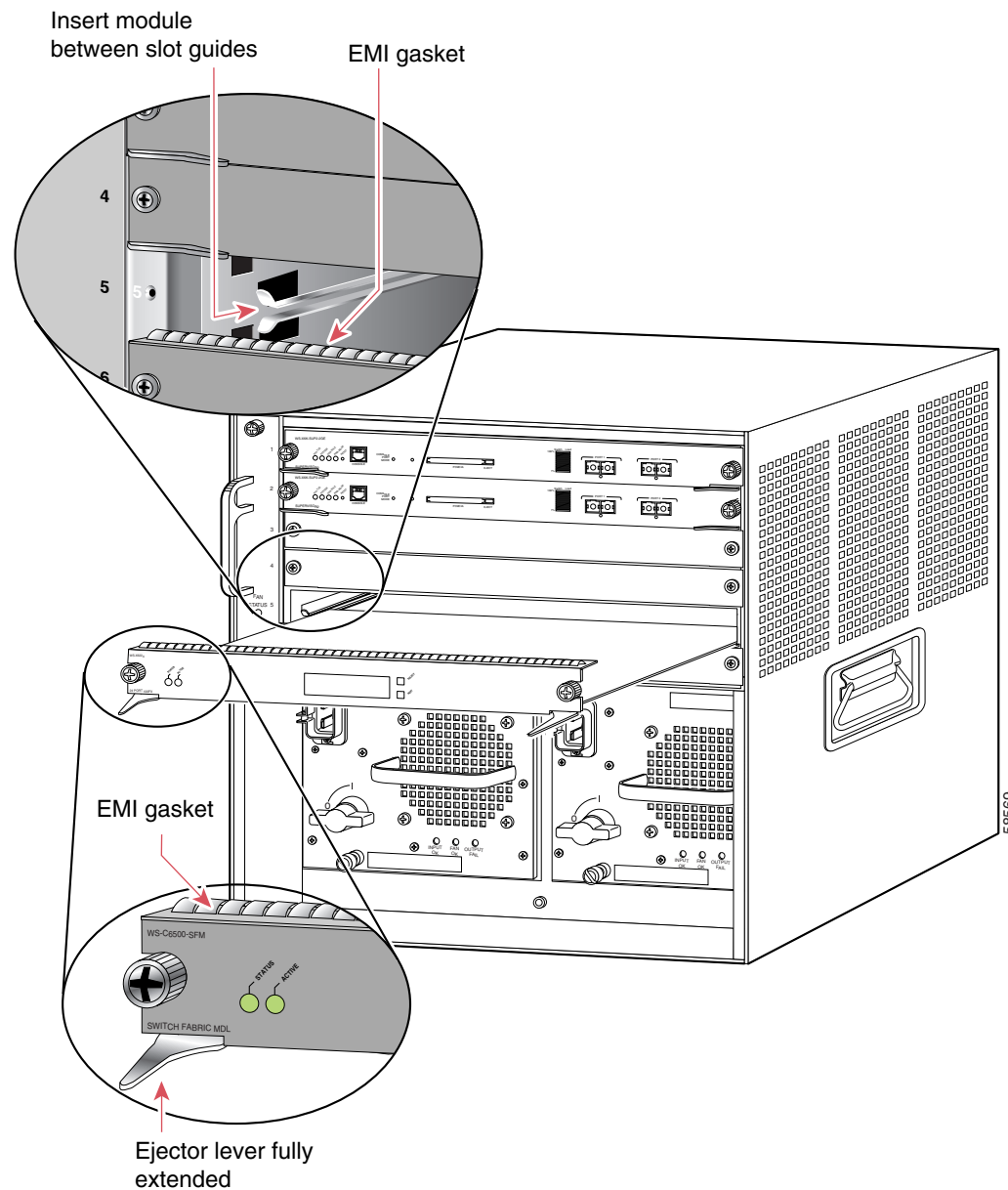
To install a module in the chassis, perform these steps:

Step 1 Choose a slot for the module.

Step 2 Verify that there is enough clearance to accommodate any interface equipment that you will connect directly to the module ports. If possible, place modules between empty slots that contain only module filler plates.

Step 3 Verify that the captive installation screws are tightened on all modules installed in the chassis.

This action ensures that the EMI gaskets on all modules are fully compressed to maximize the opening space for the replacement module.

✎

Note If the captive installation screws are loose, the EMI gaskets on the installed modules will push adjacent modules toward the open slot, reducing the opening size and making it difficult to install the replacement module.

Step 4 Remove the module filler plate by removing the two Phillips pan-head screws from the filler plate. (To remove a module, see the "Removing the Module" section on page 13.)

**Step 5** Fully open both ejector levers on the new or replacement module. (See Figure 2.)

Figure 2   Positioning the Module in a Horizontal Slot Chassis

Insert module
between slot guides

EMI gasket

EMI gasket

WS-C6500-SFM

STATUS   ACTIVE

SWITCH FABRIC MDL

58569

Ejector lever fully
extended

Step 6   Depending on the orientation of the slots in the chassis (horizontal or vertical), perform one of the following sets of substeps:

Horizontal slots

   a.   Position the module in the slot. Make sure that you align the sides of the module carrier with the slot guides on each side of the slot. (See Figure 2.)

   b.   Carefully slide the module into the slot until the EMI gasket along the top edge of the module makes contact with the module in the slot above it and both ejector levers have closed to approximately 45 degrees with respect to the module faceplate. (See Figure 3.)

Figure 3   Clearing the EMI Gasket in a Horizontal Slot Chassis
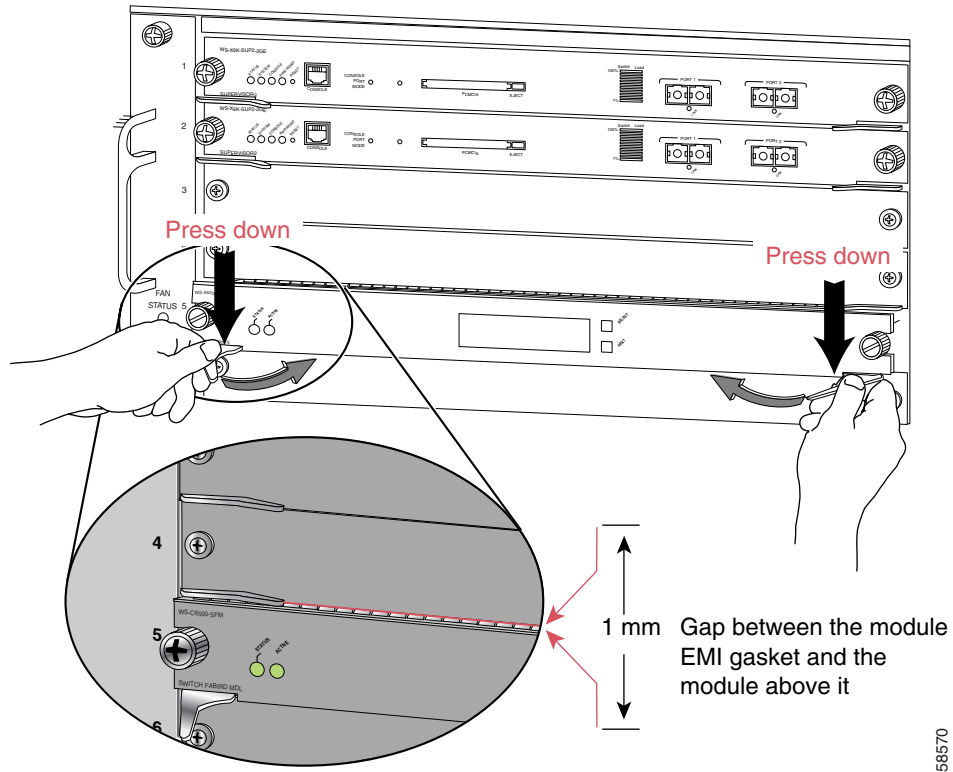
c. Using the thumb and forefinger of each hand, grasp the two ejector levers and press down to create a small (0.040 inch [1 mm]) gap between the EMI gasket and the module above it. (See Figure 3.)

⚠️

Caution   Pressing down too firmly on the levers will bend and damage them.

d. While pressing down, simultaneously close the left and right ejector levers to fully seat the module in the backplane connector. The ejector levers are fully closed when they are flush with the module faceplate. (See Figure 4.)

Figure 4   Ejector Lever Closure in a Horizontal Slot Chassis

Ejector levers flush
with module faceplate
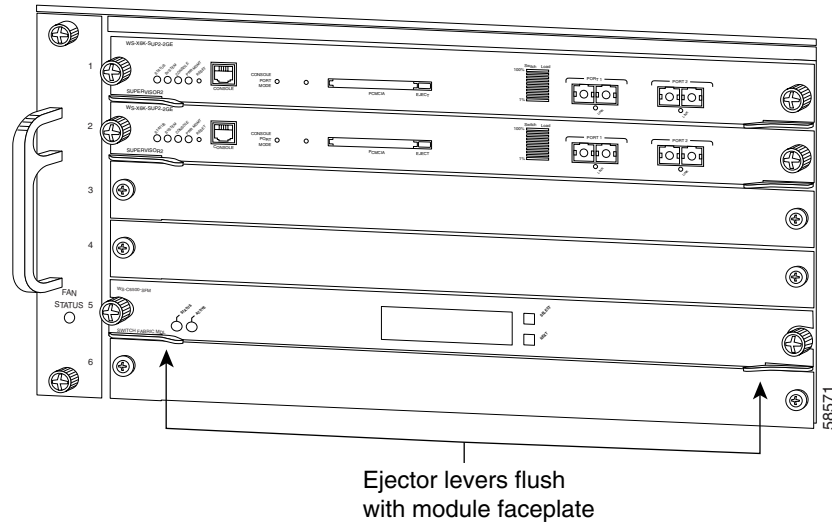
> ✎
> **Note**   Failure to fully seat the module in the backplane connector can result in system messages.

**e.** Tighten the two captive installation screws on the module.

> ✎
> **Note**   Make sure that the ejector levers are fully closed before tightening the captive installation
> screws.

Vertical slots

**a.** Position the switching module in the slot. (See Figure 5.) Make sure that you align the sides of the
switching-module carrier with the slot guides on the top and bottom of the slot.

Figure 5   Positioning the Module in a Vertical Slot Chassis
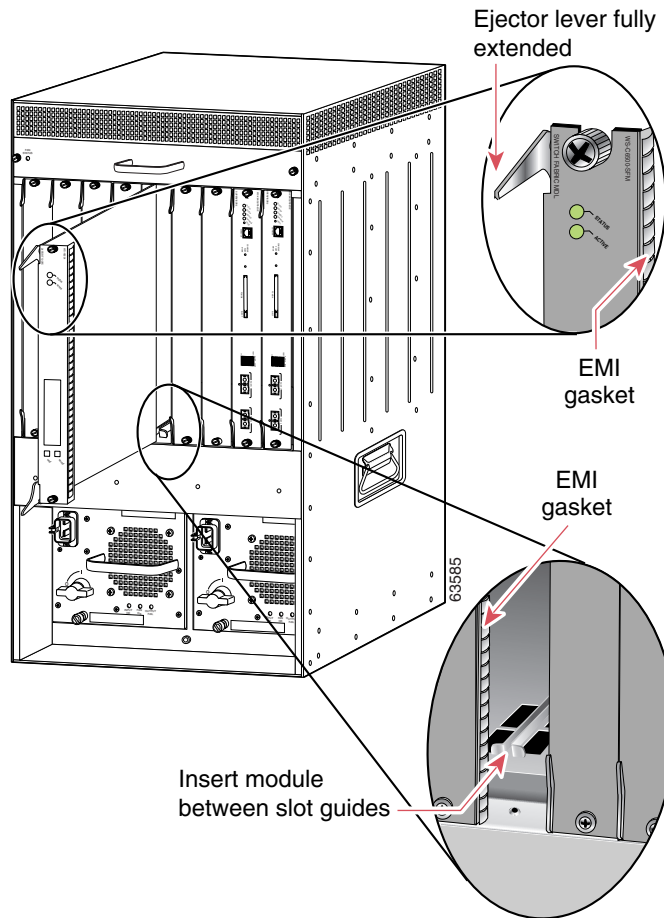
b. Carefully slide the module into the slot until the EMI gasket along the right edge of the module makes contact with the module in the slot adjacent to it and both ejector levers have closed to approximately 45 degrees with respect to the module faceplate. (See Figure 6.)

c. Using the thumb and forefinger of each hand, grasp the two ejector levers and exert a slight pressure to the left, deflecting the module approximately 0.040 inches (1 mm) to create a small gap between the module EMI gasket and the module adjacent to it. (See Figure 6.)

*Figure 6   Clearing the EMI Gasket in a Vertical Slot Chassis*

⚠
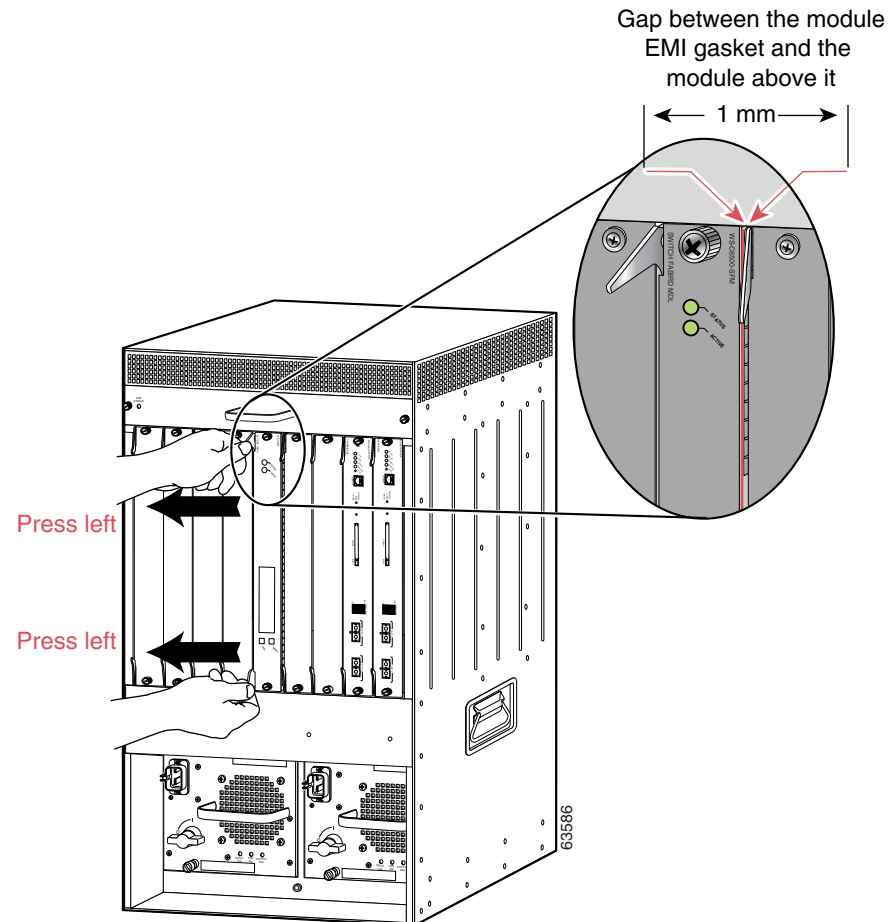
Caution   Exerting too much pressure on the ejector levers will bend and damage them.

d. While pressing on the ejector levers, simultaneously close them to fully seat the module in the backplane connector. The ejector levers are fully closed when they are flush with the module faceplate. (See Figure 7.)

Figure 7   Ejector Lever Closure in a Vertical Slot Chassis
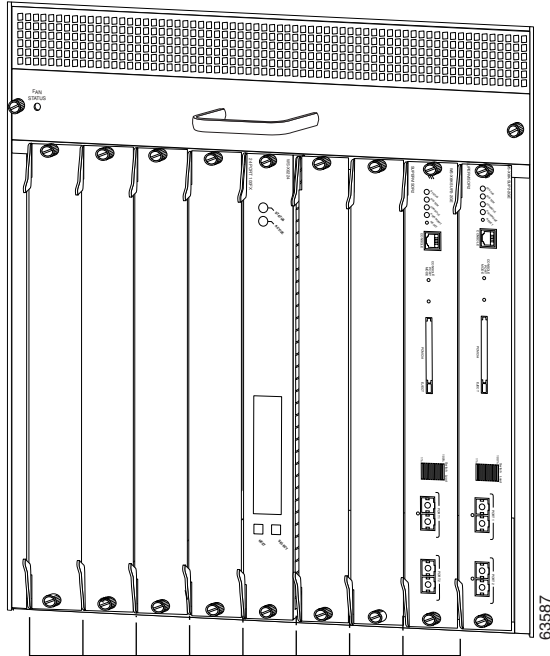
All ejector levers flush
with module faceplate

e. Tighten the two captive installation screws on the module.

✎

Note   Make sure that the ejector levers are fully closed before tightening the captive installation
screws.

This completes the CSM-S installation procedure.

Verifying the Installation

When you install the CSM-S into the Catalyst 6500 series switch, the module goes through a startup
sequence that requires no intervention. At the successful conclusion of the startup sequence, the green
Status LED will light and remain on. If the Status LED does not show green, or if it shows a different
color, refer to Table 1 on page 8 to determine the module status.

Using the CLI

The software interface for the module is the Cisco IOS and the Catalyst operating system command-line
interface that is accessed through a Telnet connection to the switch or through the switch console
interface. Refer to the *Catalyst 6500 Series Switch Cisco IOS Software Configuration Guide* and the
Catalyst 6500 Series Switch Software Configuration Guide for details.

To understand the Cisco IOS command-line interface and Cisco IOS command modes, refer to Chapter 2, "Command-Line Interfaces," in the *Catalyst 6500 Series Switch Cisco IOS Software Configuration Guide*.

To understand the Catalyst operating system command-line interface and Catalyst operating system command modes, refer to Chapter 2, "Command-Line Interfaces," in the *Catalyst 6500 Series Switch Configuration Guide*.

Unless your switch is located in a fully trusted environment, we recommend that you configure the module through a Telnet connection using Secure Shell (SSH) encryption.

You can session into the module from the switch console and configure the CSM-S. The session is a Telnet interface through the Ethernet out-of-band channel (EOBC) of the switch backplane.

You can also make a Telnet connection into the module from a specified host and on a specific interface. Telnet support for this host should be configured or enabled from the module console.

Console output is redirected to all active Telnet sessions. When no Telnet session is available, the output is saved to a buffer. The buffer output can be subsequently examined when you make a Telnet connection into the module.

Related Documentation

For more detailed installation and configuration information for the Content Switching Module with SSL, refer to the following publications:

- *Release Notes for the Catalyst 6500 Series Switch Content Switching Module with SSL*
- *Catalyst 6500 Series Switch Content Switching Module with SSL Installation Note*
- *Catalyst 6500 Series Switch Content Switching Module with SSL Command Reference*
- *Regulatory Compliance and Safety Information for the Catalyst 6500 Series Switches*

For more detailed installation and configuration information for SSL services, refer to the following publications:

- *Release Notes for Catalyst 6500 Series SSL Services Module Software Release 2.x*
- *Catalyst 6500 Series Switch SSL Services Module Installation and Verification Note*
- *Catalyst 6500 Series Switch SSL Services Module Command Reference*
- *Catalyst 6500 Series Switch SSL Services Module System Messages*

Translated Safety Warnings

Warning **Invisible laser radiation present.** Statement 1016

Waarschuwing **Onzichtbare laserstraling aanwezig.**

Varoitus **Näkymättömiä lasersäteitä.**

Attention **Rayonnement laser actif mais invisible.**

Warnung	**Unsichtbare Laserstrahlung.**
Avvertenza	**Radiazione laser invisibile.**
Advarsel	**Usynlig laserstråling.**
Aviso	**Radiação laser invisível presente.**
¡Advertencia!	**Existe radiación láser invisible.**
Varning!	**Nu pågående osynlig laserstrålning.**
Figyelem	**Láthatatlan lézersugárzás van jelen.**
Предупреждение	Присутствует невидимое лазерное излучение.
警告	还存在不可见的激光辐射。
警告	目に見えないレーザー光線が放射されています。

Warning	**Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.** Statement 1029
Waarschuwing	**Lege vlakplaten en afdekpanelen vervullen drie belangrijke functies: ze voorkomen blootstelling aan gevaarlijke voltages en stroom binnenin het frame, ze bevatten elektromagnetische storing (EMI) hetgeen andere apparaten kan verstoren en ze leiden de stroom van koellucht door het frame. Het systeem niet bedienen tenzij alle kaarten, vlakplaten en afdekkingen aan de voor- en achterkant zich op hun plaats bevinden.**
Varoitus	**Tyhjillä tasolaikoilla ja suojapaneeleilla on kolme tärkeää käyttötarkoitusta: Ne suojaavat asennuspohjan sisäisille vaarallisille jännitteille ja sähkövirralle altistumiselta; ne pitävät sisällään elektromagneettisen häiriön (EMI), joka voi häiritä muita laitteita; ja ne suuntaavat tuuletusilman asennuspohjan läpi. Järjestelmää ei saa käyttää, elleivät kaikki tasolaikat, etukannet ja takakannet ole kunnolla paikoillaan.**
Attention	**Ne jamais faire fonctionner le système sans que l'intégralité des cartes, des plaques métalliques et des panneaux avant et arrière ne soient fixés à leur emplacement. Ceux-ci remplissent trois fonctions essentielles : ils évitent tout risque de contact avec des tensions et des courants dangereux à l'intérieur du châssis, ils évitent toute diffusion d'interférences électromagnétiques qui pourraient perturber le fonctionnement des autres équipements, et ils canalisent le flux d'air de refroidissement dans le châssis.**

Warnung	**Blanke Faceplates und Abdeckungen haben drei wichtigen Funktionen: (1) Sie schützen vor gefährlichen Spannungen und Strom innerhalb des Chassis; (2) sie halten elektromagnetische Interferenzen (EMI) zurück, die andere Geräte stören könnten; (3) sie lenken den kühlenden Luftstrom durch das Chassis. Das System darf nur betrieben werden, wenn alle Karten, Faceplates, Voder- und Rückabdeckungen an Ort und Stelle sind.**
Avvertenza	**Le piattaforme bianche e i panelli di protezione hanno tre funzioni importanti: Evitano l'esposizione a voltaggi e correnti elettriche pericolose nello chassis, trattengono le interferenze elettromagnetiche (EMI) che potrebbero scombussolare altri apparati e dirigono il flusso di aria per il raffreddamento attraverso lo chassis. Non mettete in funzione il sistema se le schede, le piattaforme, i panelli frontali e posteriori non sono in posizione.**
Advarsel	**Blanke ytterplater og deksler sørger for tre viktige funksjoner: de forhindrer utsettelse for farlig spenning og strøm inni kabinettet; de inneholder elektromagnetisk forstyrrelse (EMI) som kan avbryte annet utstyr, og de dirigerer luftavkjølingsstrømmen gjennom kabinettet. Betjen ikke systemet med mindre alle kort, ytterplater, frontdeksler og bakdeksler sitter på plass.**
Aviso	**As faces furadas e os painéis de protecção desempenham três importantes funções: previnem contra uma exposição perigosa a voltagens e correntes existentes no interior do chassis; previnem contra interferência electromagnética (EMI) que poderá danificar outro equipamento; e canalizam o fluxo do ar de refrigeração através do chassis. Não deverá operar o sistema sem que todas as placas, faces, protecções anteriores e posteriores estejam nos seus lugares.**
¡Advertencia!	**Las placas frontales y los paneles de relleno cumplen tres funciones importantes: evitan la exposición a niveles peligrosos de voltaje y corriente dentro del chasis; reducen la interferencia electromagnética (EMI) que podría perturbar la operación de otros equipos y dirigen el flujo de aire de enfriamiento a través del chasis. No haga funcionar el sistema a menos que todas las tarjetas, placas frontales, cubiertas frontales y cubiertas traseras estén en su lugar.**
Varning!	**Tomma framplattor och skyddspaneler har tre viktiga funktioner: de förhindrar att personer utsätts för farlig spänning och ström som finns inuti chassit; de innehåller elektromagnetisk interferens (EMI) som kan störa annan utrustning; och de styr riktningen på kylluftsflödet genom chassit. Använd inte systemet om inte alla kort, framplattor, fram- och bakskydd är på plats.**
Figyelem	**Az előlapok és burkolópanelek három fontos funkciót töltenek be: biztosítják a veszélyes feszültségű és áramerősségű területek érintésvédelmét; elnyelik a más berendezések működésében működési zavarokat okozó elektromágneses interferenciát (EMI); a gépházon belül terelik a hűtőlevegőt. Csak úgy működtesse a rendszert, ha minden kártya, lemez, elülső és hátulsó burkolat a helyén van.**
Предупреждение	Заглушки передней панели и защитные панели выполняют три важные функции: помогают избежать поражения электротоком высокого напряжения при прикосновении к внутренним элементам, экранируют электромагнитное излучение, которое может нарушить работу другого оборудования, а также направляют охлаждающий воздушный поток внутри корпуса. Не пользуйтесь устройством со снятыми крышками, заглушками, передними и задними защитными панелями.

警告 空白面板和盖板具有三个重要的功能：它们可以防止接触到底盘内危险的电压和电流；它们将可能破坏其它设备的电磁干扰 (EMI) 封闭起来；它们可以使冷气流从底盘通过．请勿在全部卡、面板、前盖和后盖未安装完毕时操作系统．

警告 ブランクの前面プレートおよびカバー パネルは、3つの重要な役割を果たします。シャーシ内部の危険な電圧および電流に接触しないように防御の役割を果たします。他の機器に悪影響を与えるEMI(電磁波干渉)を外に出しません。さらに、シャーシ全体に冷却用の空気を流します。カード、前面プレート、前面カバー、および背面カバーがすべて取り付けられてから、システムを稼働させてください。

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation DVD

Cisco documentation and additional literature are available in a Documentation DVD package, which may have shipped with your product. The Documentation DVD is updated regularly and may be more current than printed documentation. The Documentation DVD package is available as a single unit.

Registered Cisco.com users (Cisco direct customers) can order a Cisco Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/

Cisco Marketplace:

http://www.cisco.com/go/marketplace/

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies — security-alert@cisco.com
- Nonemergencies — psirt@cisco.com

🔍

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one that has the most recent creation date in this public key server list:

http://pgp.mit.edu:11371/pks/lookup?search=psirt%40cisco.com&op=index&exact=on

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

✎

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is "down," or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.